PHYTOPATHOLOGY

AN INTERNATIONAL JOURNAL

OFFICIAL ORGAN OF THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

VOLUME XXII

JANUARY–DECEMBER, 1932

EDITORS

H. B. HUMPHREY — ANNIE RATHBUN GRAVATT — EUBANKS CARSNER

EDITOR FOR EUROPE

H. M. QUANJER

ASSOCIATE EDITORS

RUTH F. ALLEN	CHARLES DRECHSLER	J. C. GILMAN
D. L. BAILEY	F. D. HEALD	W. F. HANNA
L. R. HESLER	L. O. KUNKEL	W. D. VALLEAU
WM. H. WESTON, JR.	G. L. PELTIER	JESSIE I. WOOD

BUSINESS MANAGER

F. C. MEIER

THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

OFFICERS

F. D. HEALD, *President*
J. G. DICKSON, *Vice President*
F. C. MEIER, *Secretary-Treasurer*

COUNCILS

L. O. KUNKEL — M. W. GARDNER — G. W. KEITT
H. B. HUMPHREY

PUBLISHED FOR THE SOCIETY
SCIENCE PRESS PRINTING COMPANY
LANCASTER, PA.

ERRATA

Page 75, paragraph 3, line 10, *after* sodium *add* silicate.

Page 76, small table, *combine first column headings,* Average daily losses, 180-day incubation, *applying to both columns.*

Page 79, paragraph 3, line 2, *change index* 10 *to* 3; *delete* footnote 10.

Page 108, paragraph 2, line 7, *after* reaction of *insert* all.

Page 149, table 4, legend, *read Sclerotinia* for *sclerotinia.*

Page 159, paragraph 3, line 1, *read* sulphite *for* sulphide.

Page 160, table 14, column heading 2 under Pentathionic acid, *read* 0.00068 N. *for* 0.0068 N.; table 14, line 6 under Pathogenic fungi tested, *read* Botrytis *for* Botrytus.

Page 197, paragraph 2, line 2, *read* have *for* has.

Page 234, paragraph 3, line 9, *change* This form *to* Thus, formation.

Page 344, figure 11, legend, line 4, *read* B. *for* D.; line 11, and page 345, line 1 and 2, *substitute* apparently have mistaken the gelatinous egg-containing matrix for the dead body of the female filled with developing eggs *for* apparently have mistaken the dead body of the female filled with developing eggs for the gelatinous egg-containing matrix.

Page 397, paragraph 2, line 2, *read* Neofabraea *for* Neofabreae.

Page 399, paragraph 4, lines 10 and 11, *substitute* agar, corn-meal, malt, Dox, apple, and beef agars *for* agar. Corn meal, malt, Dox, apple, and beef agars also were used.

Page 481, paragraph 4, line 1, *read* cavavaliae *for* canabaliae.

Page 497, figure 1, legend, lines 1 and 2, *read* Marquis *for* Marquiz.

Page 548, line 6, *read* 549 *for* 56.

Page 784, line 3, *read* facultative *for* faculative.

Page 14, line 22, Supplement to Number 9, *read* MacLachlan, J. D., *for* McLachlan, J. D.; line 56, *read* Miyabe, Kingo, *for* Miyaba, Kingo.

Page 817, table 1, legend, *read* data *for* date.

Page 822, line 14, *read* was *for* and.

Page 885, table 4, legend, *read* hypochlorite *for* hyopchlorite; line 10, *after* cent *insert* of.

Page 888, paragraph 2, line 11, *after* acid *insert* (=3 per cent commercial HCl by volume).

Page 889, paragraph 4, line 2, *change* maximum *to* usual.

Page 896, table 11, column 5, *change* 86 *to* 96.

Page 938, line 5, *read Celastrus for Celastris.*

Science
Wahr

CONTENTS OF VOLUME XXII

NO. 1. JANUARY

PAGE

Abstracts of papers presented at the twenty-third annual meeting of The American Phytopathological Society, New Orleans, Louisiana, December 29 to 31, 1931, inclusive 1

Some nutritional disorders in corn grown in sand cultures. N. A. PETTINGER, R. G. HENDERSON, and S. A. WINGARD 33

Chloroses of the rose. RICHARD P. WHITE 53

A study of laboratory methods for investigating the relation between moisture content of wood and fungal growth. FERDINAND W. HAASIS 71

Varietal susceptibility of beans to an American and European strain of Phytomonas medicaginis var. phaseolicola, and a comparison of the strains in culture. WALTER H. BURKHOLDER and KAROL ZALESKI 85

Immunity in plants. J. A. DE TOMASI 95

Phytopathological Note 103

NO. 2. FEBRUARY

Physiologic specialization as a factor in the epiphytology of Puccinia graminis tritici. JAMES M. WALLACE 105

The relation of pentathionic acid and its component constituents to the toxicity of sulphur fungicides. O. NEAL LIMING 143

Studies on the development of crown gall, hairy root, and wound overgrowths in treated soil. A. J. RIKER and W. M. BANFIELD 167

The development of crown gall, hairy root, and wound overgrowth in glass cylinders. A. J. RIKER, E. M. HILDEBRAND, and S. S. IVANOFF 179

The pathogenicity of Fusarium conglutinans Wr. at low soil temperatures. L. M. BLANK 191

Book Review 197

NO. 3. MARCH

Frederick John Pritchard, 1874–1931. WILLIAM S. PORTE 201

A preliminary report on resistance to curly top of sugar beet in bean hybrids and varieties. W. W. MACKIE and KATHERINE ESAU 207

Phytophthora arecae, parasitic on Areca tops, and a strain of P. palmivora Butl. (P. Faberi Maubl.) on a new host, Aleurites fordi. S. V. VENKATARAYAN 217

Areolate mildew of cotton. JOHN EHRLICH and FREDERICK A. WOLF 229

Sclerospora graminicola on bajra (Pennisetum typhoideum). H. CHAUDHURI 241

Transmission of smut and molds in figs. H. N. HANSEN and A. E. DAVEY 247

Seed dissemination in Fusarium wilt of pea. W. C. SNYDER 253

Effect of bunt on height of wheat plants. E. N. BRESSMAN 259

Phytopathological Notes

An atypical lesion on cotton leaves caused by Bacterium malvacearum. MARY K. BRYAN 263

Root, crown, and shoot rot of milo. CHARLOTTE ELLIOTT, F. A. WAGNER, and L. E. MELCHERS 265

Sulphur dioxide injury of tomatoes. G. B. RAMSEY 267

Black-walnut canker caused by a Nectria. J. M. ASHCROFT 268

Botrytis stem infection in pears. J. S. COOLEY 269
Black rot of stocks. L. M. COOLEY 270

NO. 4. APRIL

Calvin Henry Kauffman, 1869–1931. E. B. MAINS 271
Effects of electromagnetic waves on fungi. FRANK H. JOHNSON 277
Transmission of the pineapple yellow-spot virus by Thrips tabaci. MAURICE B. LINFORD 301
The development of the root-knot nematode in relation to root tissues of pineapple and cowpea. G. H. GODFREY and JULIETTE OLIVEIRA 325
Investigations on apple blotch. EDWIN J. KOHL 349
Peanut wilt in Georgia. J. H. MILLER and H. W. HARVEY 371
Observations on the parasitic ability of certain species of Pythium. F. K. SPARROW, JR. 385
Phytopathological Note 391
Book Review 393

NO. 5. MAY

Some pathological studies on apple cankers. NELLIE A. BROWN 397
Zinc-lime: a fungicide for the peach. JOHN W. ROBERTS and LESLIE PIERCE 415
Seed treatments with chemical dusts and formaldehyde for smut control in oats. V. F. TAPKE 429
Resistance of monocotyledons to Phymatotrichum root rot. J. J. TAUBENHAUS and WALTER N. EZEKIEL 443
Resistance of the Turk's-cap hibiscus, Malvaviscus conzattii, to Phymatotrichum root rot. WALTER J. BACH and J. J. TAUBENHAUS 453
Growth of Phymatotrichum omnivorum in plant juices as correlated with resistance of plants to root rot. WALTER N. EZEKIEL, J. J. TAUBENHAUS, and J. F. FUDGE 459
Report of the twenty-third annual meeting of The American Phytopathological Society 475

NO. 6. JUNE

Nathaniel Orson Howard, 1880–1932. WALTER H. SNELL 491
The influence of altered host metabolism upon modification of the infection type with Puccinia graminis tritici p. f. 21. DOROTHY F. FORWARD 493
A rot of apple fruit caused by **Phytomonas melophthora**, n. sp., following invasion the apple maggot. T. C. ALLEN and A. J. RIKER 557
The basis for Sclerospora sorghi as a species. WM. H. WESTON, JR., and B. N. UPPAL 573
Two new hosts of the downy mildew of sorghum in Bombay. B. N. UPPAL and M. K. DESAI 587
Chemical treatment of pecan rosette. A. O. ALBEN, J. R. COLE, and R. D. LEWIS 595
Efficiency of oiled wraps in the commercial control of apple scald. NEIL E. STEVENS and NELLIE W. NANCE 603
Some diseases of wild potatoes in Mexico. DONALD REDDICK 609
Phytopathological Note
Macrosporium solani on tomato fruit. GEOFFREY SAMUEL 613

NO. 7. JULY

The effect of different temperatures on the reaction of Hope wheat to bunt. WILLIAM K. SMITH 615

A nonifectious leaf-deforming principle from mosaic tomato plants. H. R. KRAYBILL, P. H. BREWER, R. W. SAMSON, and M. W. GARDNER 629
A hitherto unreported disease of maize and beans. W. W. MACKIE 637
The adherence of copper dusts to foliage. L. R. STREETER, E. O. MADER, and F. J. KOKOSKI 645
The effect of delayed planting on the control of bunt by copper carbonate dust. H. H. FLOR 651
The behavior of Bacillus amylovorus in soil. P. A. ARK 657
The production of bunt chlamydospores in the vegetative tissue of the wheat plant. H. H. FLOR 661
Phytopathological Notes 665
Armillaria crown rot of strawberry. S. M. ZELLER 665
Pineapple disease (Thielaviopsis ethaceticus) on sugar cane at Tucumán, Argentina. H. A. JAYNES 667

NO. 8. AUGUST

Louis Hermann Pammel, 1862–1931. JOSEPH C. GILMAN 669
The effect of the sugary gene in corn on resistance to seedling blight caused by Gibberella saubinetii. P. H. SENN 675
Carbohydrate fermentation by certain closely related species in the genus Phytomonas. WALTER H. BURKHOLDER 699
Crinkle disease of strawberry. S. M. ZELLER and E. K. VAUGHAN 709
Keeping quality as a factor in selecting new varieties of small fruits. NEIL E. STEVENS 715
Book Review 721

NO. 9. SEPTEMBER

Pathogenicity of three red-cedar rusts that occur on apple. PAUL R. MILLER 723
The properties of plant viruses from different host species. JAMES JOHNSON and THEODORE J. GRANT 741
A centralized scab-spray service. A. L. PIERSTORFF 759
Verticillium wilt of cotton in Mississippi. L. E. MILES and T. D. PERSONS 767
Blight of peppers in Florida caused by Phytophthora capsici. GEORGE F. WEBER 775
Synergism in a bacterial disease of Hedera helix. WALTER H. BURKHOLDER and CARL E. F. GUTERMAN 781
Phytopathological Notes 785
Bacterial and fungous flora in certain sulphur fungicides. J. F. ADAMS 785
Notes on Phyllosticta rabiei on chick pea, II. RODERICK SPRAGUE 786
Color variations in bacterial plant pathogens. MARY K. BRYAN 787
A new form of oat stem rust from a barberry area. RALPH U. COTTER 788

NO. 10. OCTOBER

A study of two Septoria leaf spots of celery. L. C. COCHRAN 791
Some environmental relations of watermelon wilt. D. R. PORTER 813
Rhizoctonia solani on cereals in South Australia. GEOFFREY SAMUEL and S. D. GARRETT 827
Trichoderma lignorum as a parasite of other soil fungi. R. WEINDLING 837
Reaction of Martin wheat to three physiologic forms of Tilletia tritici. WILLIAM K. SMITH 847
Leaf temperature of lettuce and its relation to tipburn. E. L. LECLERG 851
Studies on Bordeaux deposition. GEO. L. HOCKENYOS and GEO. R. IRWIN 857

Fungicidal value of pine-tar oil and copper resinate. E. R. DE ONG 861
Phytopathological Notes .....
Lolium infected with bunt of wheat. E. M. BRESSMAN 865
Eriodendron as host of Bacterium malvacearum. B. T. PALM 867
A note on Entyloma Dahliae Syd. from Sumatra and Guatemala. B. T. PALM 868
An undescribed loose smut of barley. V. F. TAPKE 869
Plant pathology at the Fourth Congress of the International Society of Sugar Cane Technologists in Puerto Rico. MEL. T. COOK 870
Citrus mildew. W. C. LESTER-SMITH 870
Book Review 871

NO. 11. NOVEMBER

Leigh Humboldt Pennington, 1877–1929. PERLEY SPAULDING 873
Some problems concerning blue mold in relation to cleaning and packing of apples. KENNETH F. BAKER and F. D. HEALD 879
A preliminary study on the use of indelible pencils as indicators of the moisture content of wood. FERDINAND W. HAASIS 899
Mild streak of black raspberries. L. M. COOLEY 905
Notable outbreaks of cranberry fruit rots in Massachusetts. NEIL E. STEVENS 911
Effects of anaerobic conditions on the growth of the cotton-root-rot fungus, Phymatotrichum omnivorum. D. C. NEAL and R. E. WESTER 917
Phytopathological Notes .....
The rôle of diseases in plant quarantines. W. A. MCCUBBIN 921
The occurrence of the perfect stage of Phomopsis mali in the United States. JOHN C. DUNEGAN 922
Another gall-forming bacterium. NELLIE A. BROWN 924
A convenient method of bleaching and clearing leaves. CLARENCE R. QUICK and FRANK A. PATTY 925
The nonspecificity of the brown-ring symptoms in narcissus attacked by nematodes. G. STEINER and EDNA M. BUHRER 927
Diaporthe citri (Faw.) Wolf, the perfect stage of Phomopsis citri and P. california. H. S. FAWCETT 928
Book Review 929
The principles of plant quarantine 933

NO. 12. DECEMBER

Pathogenicity and cultural characters of the apple sooty-blotch fungus. R. C. BAINES and M. W. GARDNER 937
The mechanism of variation in imperfect fungi: Botrytis cinerea. H. N. HANSEN and RALPH E. SMITH 953
Mosaic diseases of tobacco: V. Decomposition of the safranin-virus precipitate. CARL G. VINSON 965
Phytopathological Notes .....
Preliminary note on a Phytophthora root disease of chestnut. MARGARET MILBURN and G. F. GRAVATT 977
The odor of bunt spores. W. F. HANNA 978
New developments in treating pecan rosette with chemicals. A. O. ALBEN, J. R. COLE, and R. D. LEWIS 979
Report of the Fifth Annual Cotton-Root-Rot Conference 983
Report of the Sixteenth Annual Meeting of the Pacific Division of The American Phytopathological Society 995